## Claims

~~What is claimed is:~~

1. (amended) An active sonar system ~~having~~ comprising means for providing a broad-band transmission in the direction of an underwater target, which broad bandwidth is sufficient to contain a plurality of sub-bands, and means for simultaneously processing returns for each entire broadband transmission from said target in each sub-band, which means automatically select those specific sub-band(s) for further processing and target detection which sub-bands have simultaneously the best joint combination of target and propagation response.

2. (original) The system of claim 1 wherein said processing means is provided by a multi-band matched-filter processor.

3. (amended) The system of claim ~~1~~ 2 ~~wherever~~ wherein means are provided for processing output signals from said processor corresponding to the selected sub-band(s) for indicating target range, azimuth and/or velocity.

4. (amended) The system of claim 3 ~~wherever~~ wherein said sub-bands are about 50 Hz in width and said transmission covers a band of ~~at least~~ from typically 50-600 Hz.

5. (amended) The method of underwater target detection comprising the steps of receiving a broadband return for a target from a broadband transmission, processing said return to ~~detection~~ simultaneously detect responses from each of a plurality of sub-bands of the broadband transmission, and selecting and processing for target range, direction and/or velocity ~~at least~~ one or more of said sub-band responses which ~~is~~ have the strongest returns.

6. (new) The system of claim 1 wherein said returns are from a single shot of an airgun array which comprises said means for providing said broadband transmission.

7. (new) The system of claim 1 wherein said returns are contained in a single beam input from a multi-beam receiver.

8. (new) The system of claim 1 wherein said automatically select means is operative to select from all said sub-bands at least one which corresponds to the strongest non-zero target velocity output from each of said bands.

9. (new) The system of claim 8 wherein a plurality of about three of said strongest outputs each from a different one of said sub-bands are selected.

10. (new) The method of claim 5 wherein said selecting and processing step is carried out to select at least one response representing the strongest non-zero target velocity from all of said plurality of sub-bands.

11. (new) The method of claim 10 whereas said at least one response is a plurality of about three of said responses which represent the strongest non-zero velocity each of said about three of said responses being from different ones of from said sub-bands.